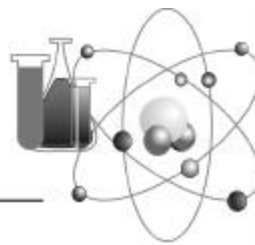


# FACTS ON FILE EMSP

## Environmental Management Science Program

### Project Highlights



*The Environmental Management Science Program (EMSP) is funding basic research projects focused on solving the most difficult problems that threaten the closure plans of DOE sites. This fact sheet highlights just one.*

### Determining Significant Endpoints for Ecological Risk Analysis

This project seeks to establish a protocol for assessing risks to non-human populations exposed to environmental stresses typically found on many DOE sites. Risk analysis procedures for humans use the individual as the “unit” of observation, and the individual’s health as the risk assessment endpoint. For ecological risk assessments, however, the proper endpoint is much debated because the appropriate unit of interest for nonhumans may not be individuals; risk might be assessed more properly at higher levels of biological organization, such as the population, community, or ecosystem.

**Locations:** Savannah River Ecology Laboratory,  
Colorado State University

**Office of Environmental Management (EM)**

**Problem Area:** Health/Ecology/Risk

**Year of Award:** 1996

**Office of Science (SC) Scientific Category/Sub-**

**Category:** Health Science/Risk Assessment

**Amount of Award:** \$897,666

**Research Value/Impact:** Currently, researchers have had great success in adapting a molecular technique used to measure stable chromosomal aberrations in human atomic-bomb survivors to a biological dosimeter for determining ecological risks. Stable aberrations, known as reciprocal translocations, unlike others, remain detectable for periods long after the initial exposure. Until recently, however, techniques development and application of the approach for ecological risk analyses would have required a monumental effort for each organism studied. It is now possible to achieve the same goal with much less effort in isolating the necessary probes by using chromosome microdissection techniques followed by polymerase chain reaction amplification.

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**More Information on the Web:**

<http://www.em.doe.gov/science> or

<http://www.id.doe.gov/emsystems/emsp>



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